

# SC 2005 Facilities and Infrastructure Workshop

## **An Approach to Prioritizing Deferred Maintenance: UT-Battelle's Experience**

### ***Where We Are On the Road to a Complete Approach***

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**June 7, 2005**

# Our Approach is multi-faceted...



**Modernization**



**Facility Ownership**



**Data and Data Tools**



**Processes and Procedures**

# In the Beginning...

**A centerpiece of the UT-Battelle proposal for ORNL Management was emphasis on redevelopment of the main ORNL Campus**

- 80% of space exceeded 30 years old**
- Only 25% of space deemed adequate under DOE criteria**



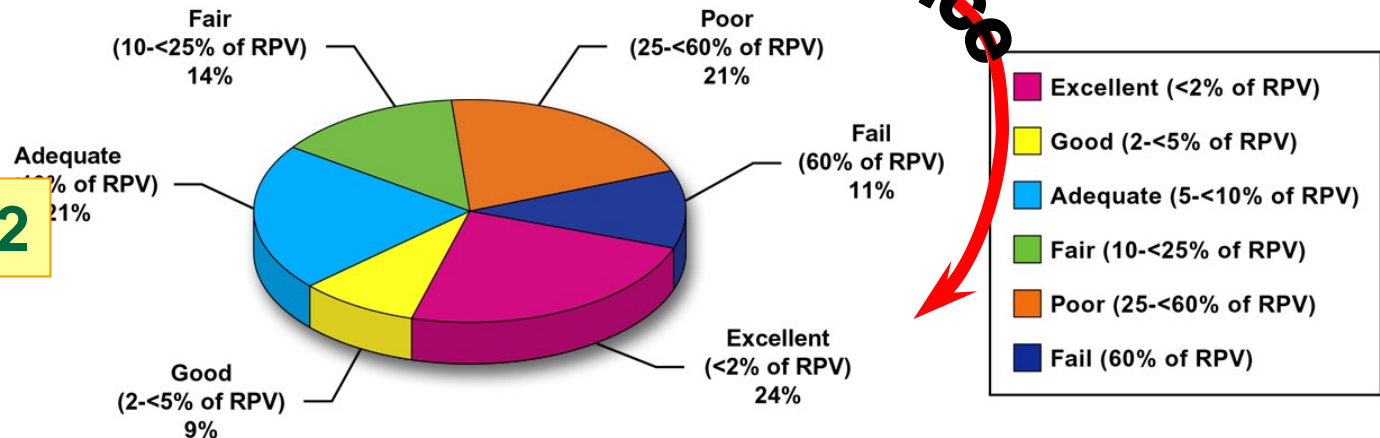


# Facility Condition Summary...at the beginning

**Circa 2000**

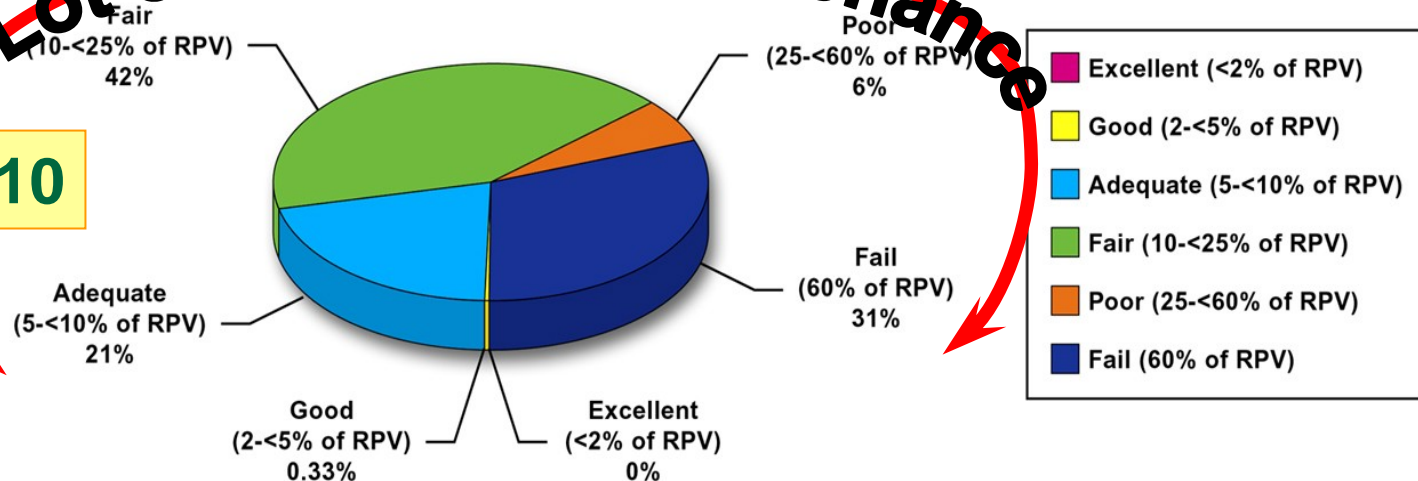
**A Lot of Deferred Maintenance**

**ORNL @ Y-12**



**A Lot of Deferred Maintenance**

**ORNL @ X-10**

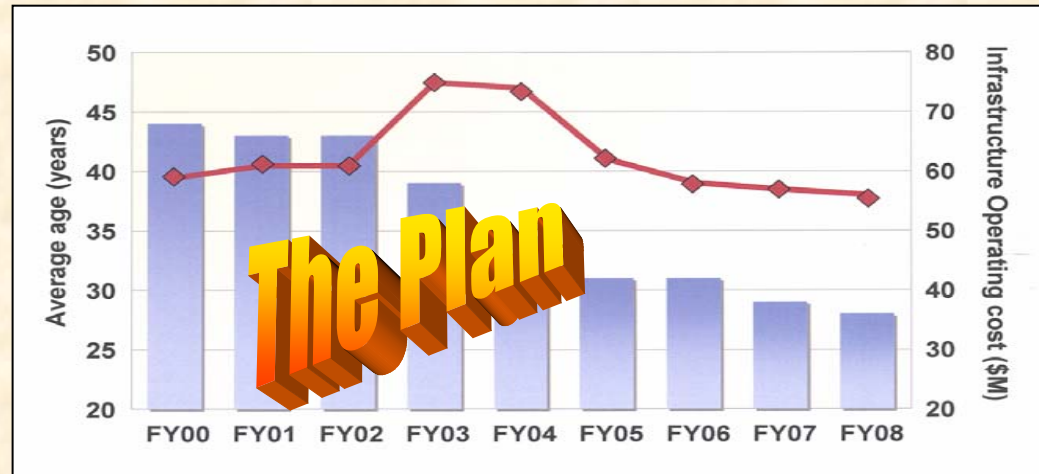


# Strategy Implemented to Change ORNL's Basic Operating Philosophy

## Facilities ownership transferred to Facilities and Operations (F&O)

- **Mission:** operate and maintain adequate space to support research
- **Goals:** 1) reduce ORNL's overall footprint and 2) eliminate aging/high maintenance facilities to achieve more maintainable footprint.
- **Plan:** keep maintenance investment the same, hence providing higher service on remaining space

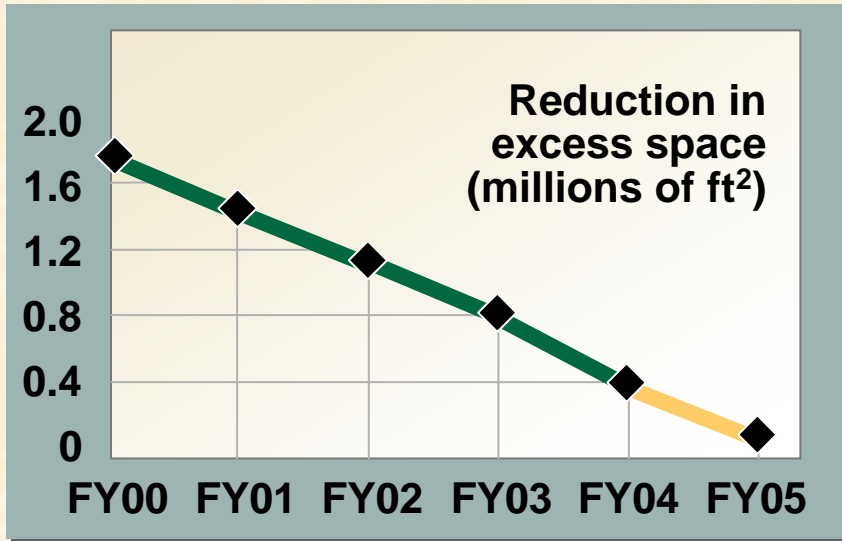
Total Operating Costs will reduce with smaller footprint



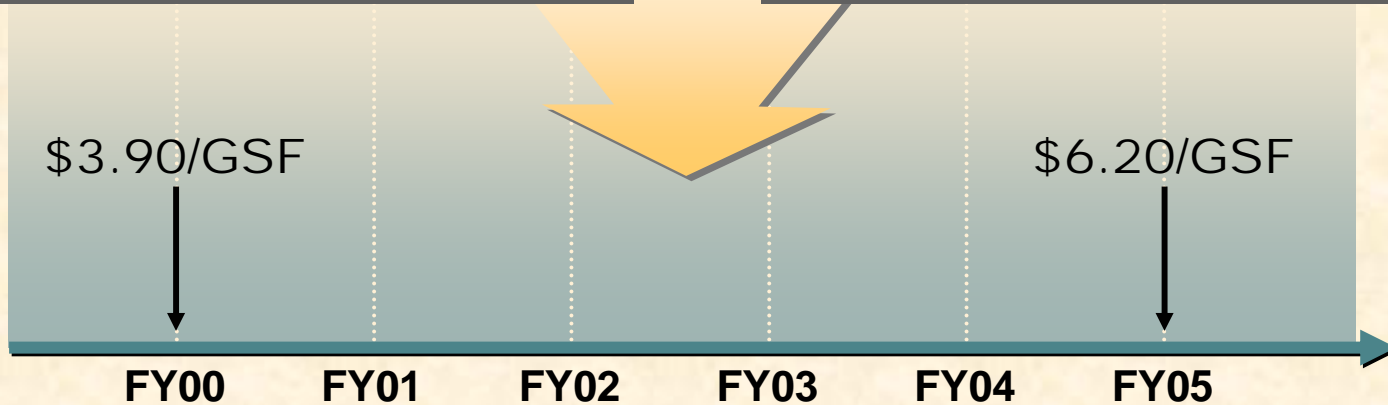
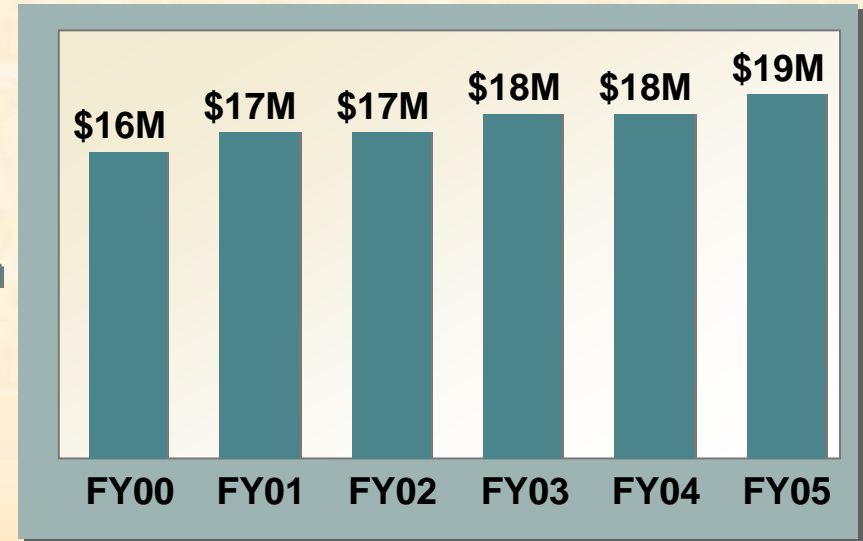
# Our strategy for improving maintenance was successful

**Today**

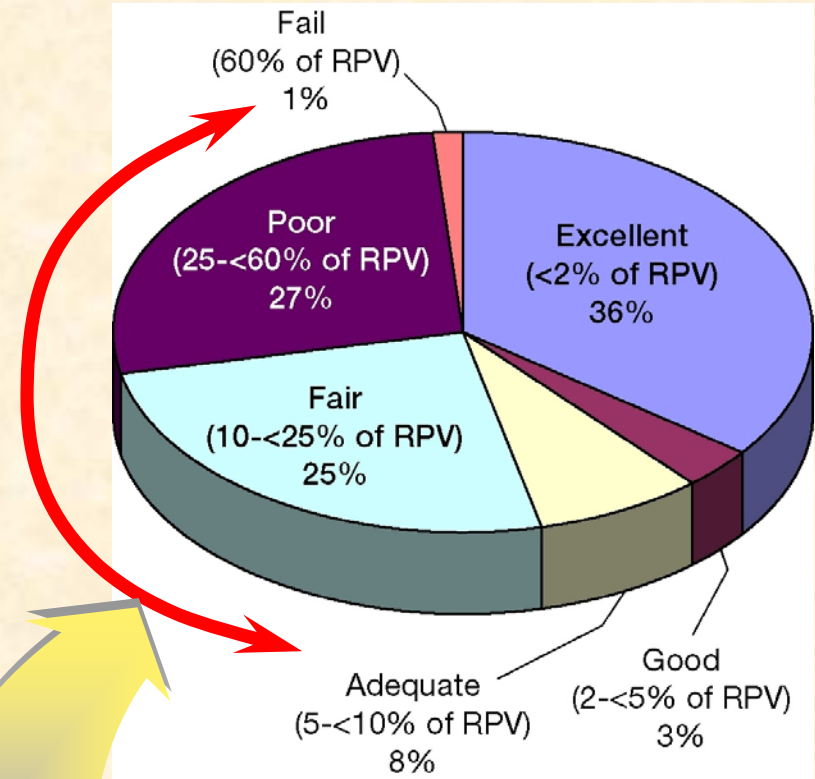
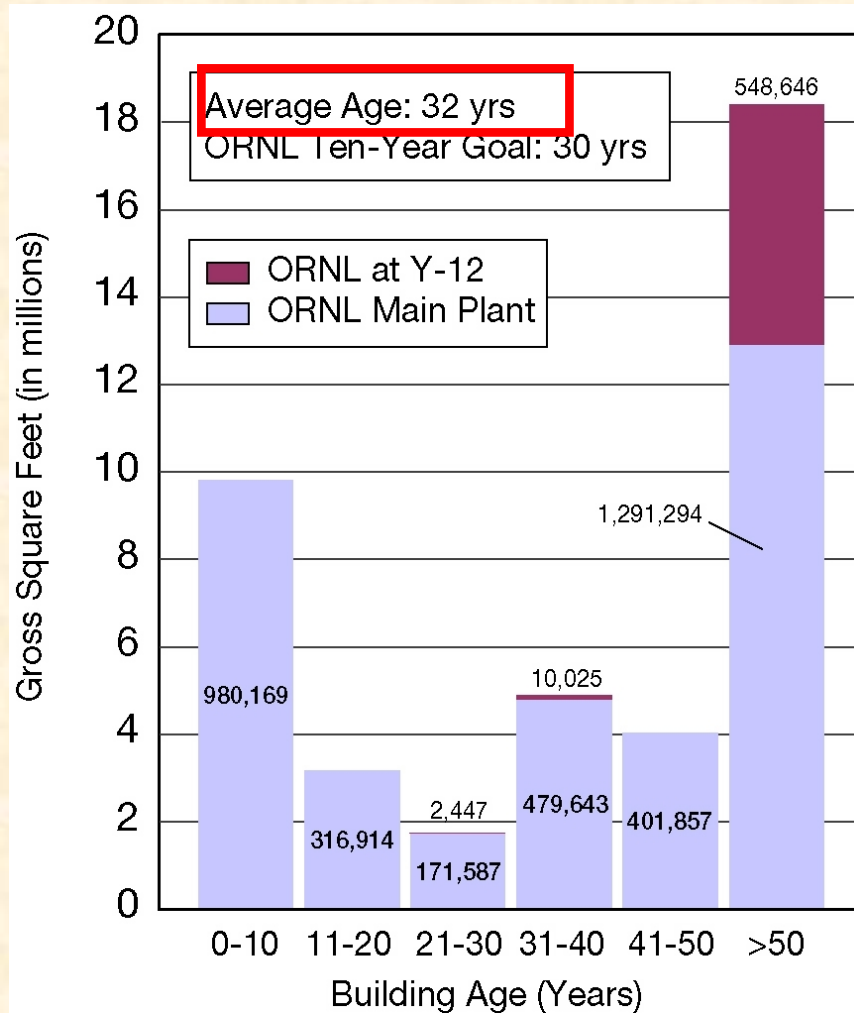
Shrink our footprint



Sustain our maintenance budget



# Our 2005 TYSP Shows...

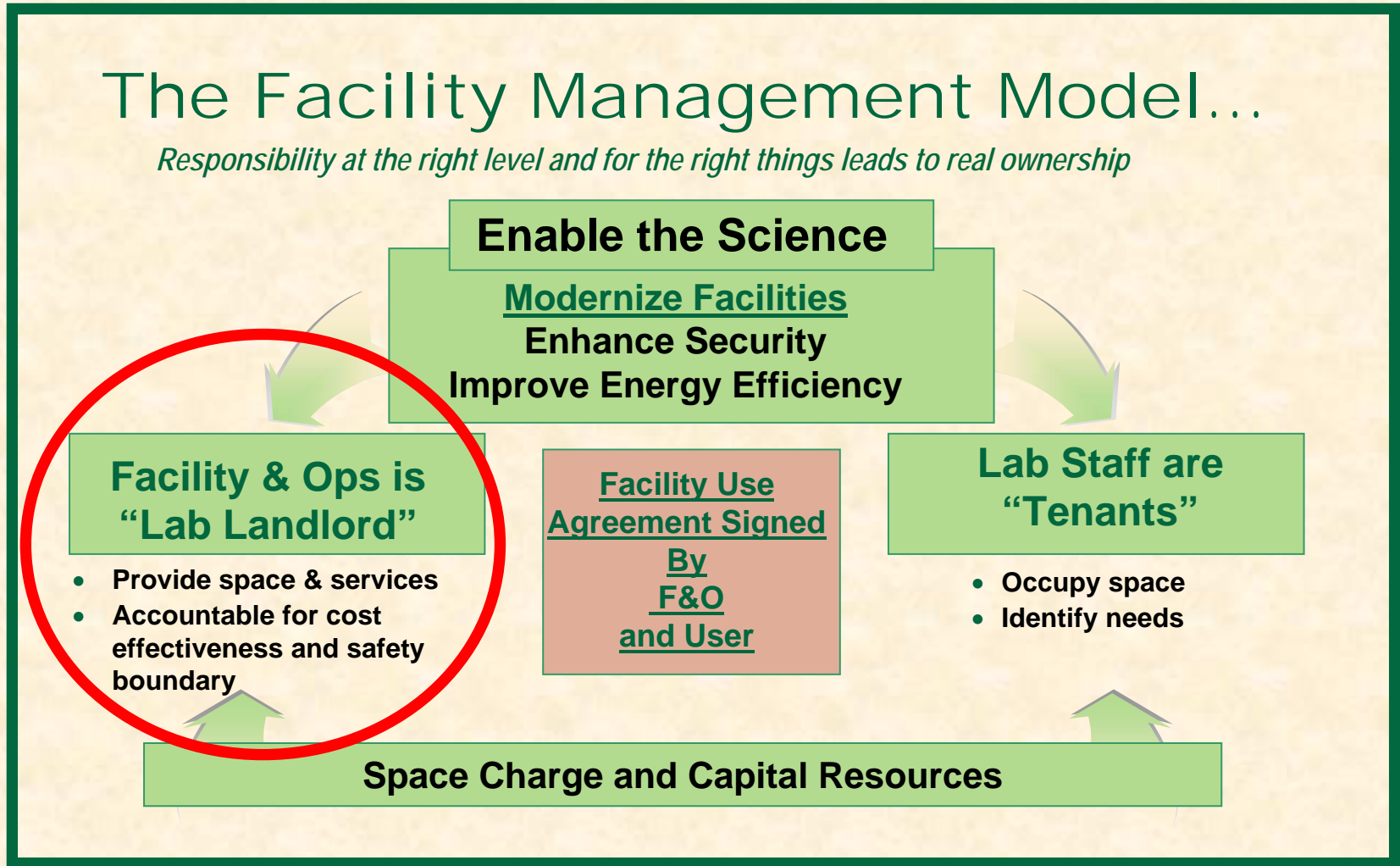


**The Facility Portfolio with Significant Deferred Maintenance Greatly Reduced**

# The Change in Facility Ownership Has Occurred...

## The Facility Management Model...

*Responsibility at the right level and for the right things leads to real ownership*





# Should the Facility Manager use this to Determine Deferred Maintenance Reduction?

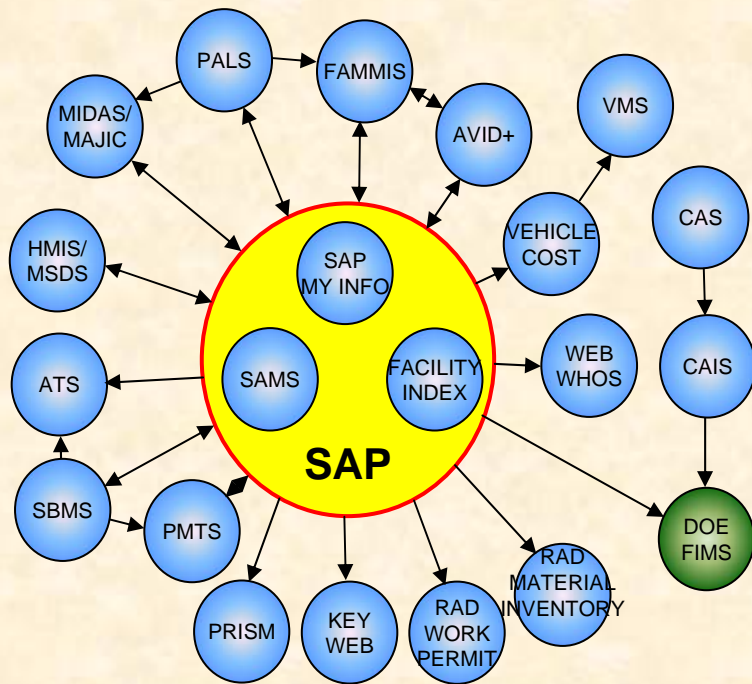
**ORNL  
CAIS  
Recorded  
Deferred  
Maint.**

Uniformat II Code	Description	ORNL Costs	%
D50	Electrical Systems	\$66,031,215	60.60%
B20	Exterior Closure	\$18,455,275	16.94%
D30	Mechanical - HVAC	\$11,271,775	10.35%
C30	Interior Finishes	\$7,591,415	6.97%
B30	Roofing	\$2,167,205	1.99%
C10	Interior Construction	\$1,398,235	1.28%
A10	Foundations	\$1,174,360	1.08%
D20	Mechanical - Plumbing	\$474,280	0.44%
G30	Sitework Mechanical Util.	\$155,563	0.14%
A20	Basement Construction	\$67,523	0.06%
B10	Superstructure	\$54,065	0.05%
F10	Specialty Systems	\$44,918	0.04%
G20	Sitework Improvements	\$35,743	0.03%
D10	Conveying Systems	\$16,208	0.01%
G10	Sitework Preparation	\$7,500	0.01%
G90	Sitework Other	\$5,665	0.01%
C20	Interior Stairs	\$4,415	0.00%
D40	Mechanical - Fire Protection	\$1,910	0.00%
G40	Site Electrical Utilities		
	Other		
	<b>Total</b>	<b>\$108,957,268</b>	

Priority ?

# Data Tools Must Enhance the Facility Managers Ability to Execute Accountabilities

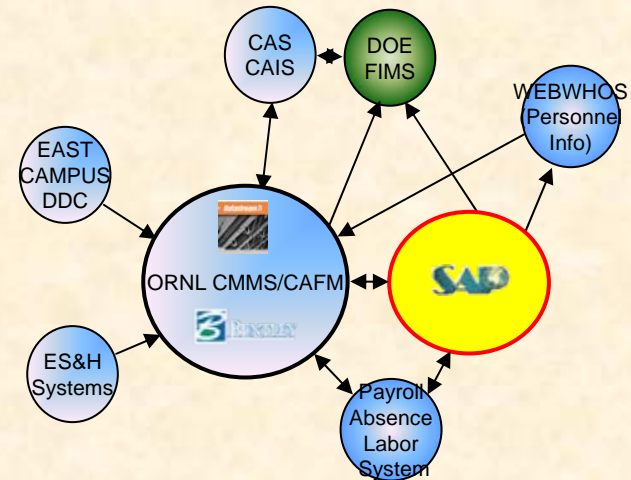
## “Past” RELATIONSHIPS



### Stand Alone Systems

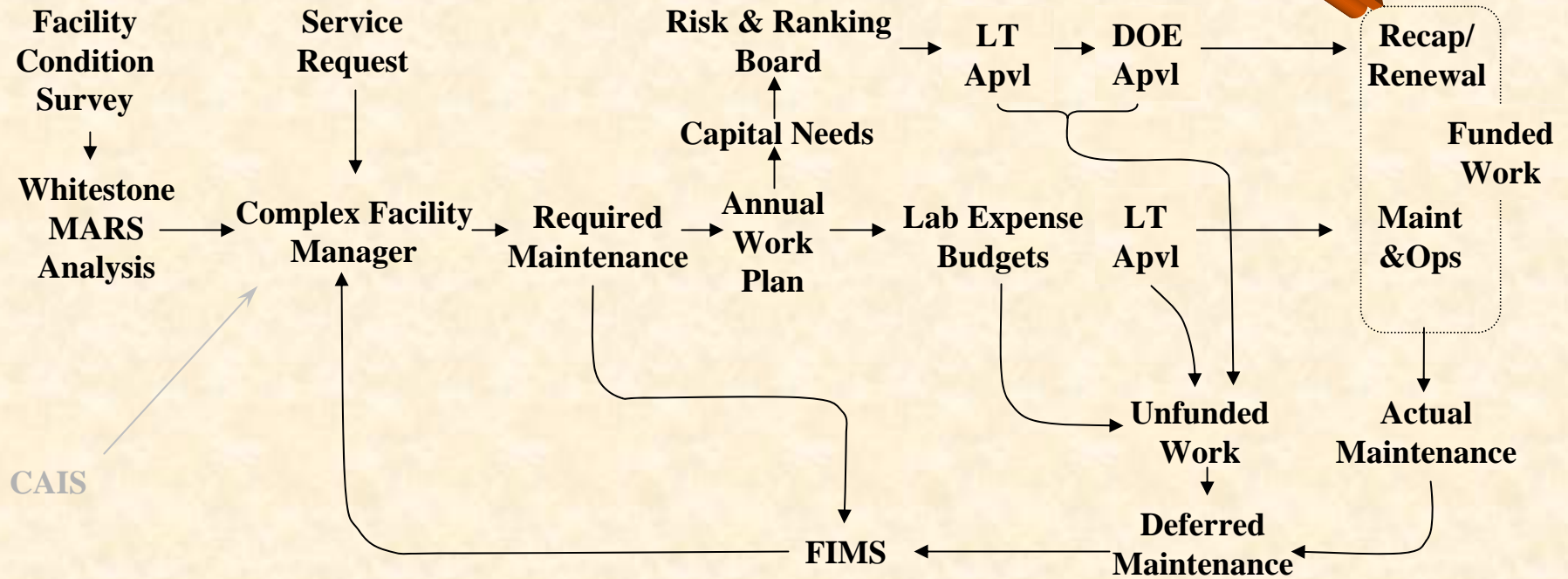


## “In-Process” RELATIONSHIPS



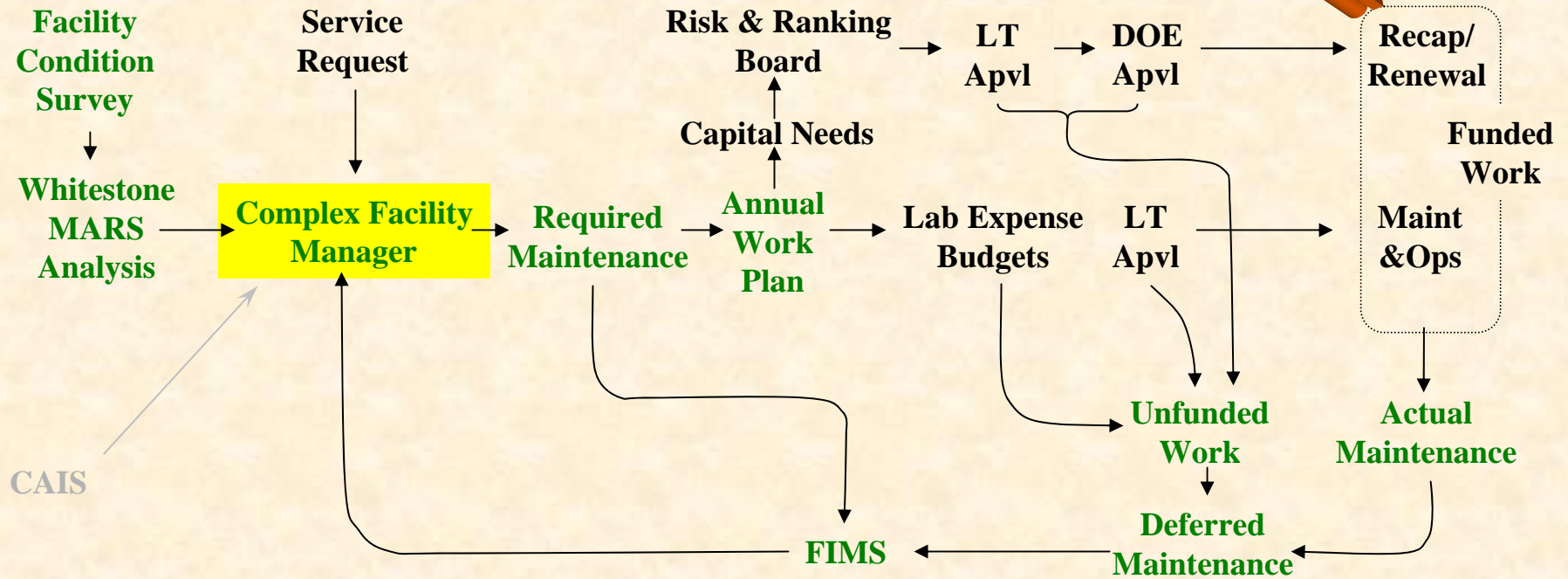
- Improve work performance
- Improve accountabilities
- Improved performance metrics

**Today**  
**or nearly so...**



# Facility Stewardship

**Today**  
or nearly so...



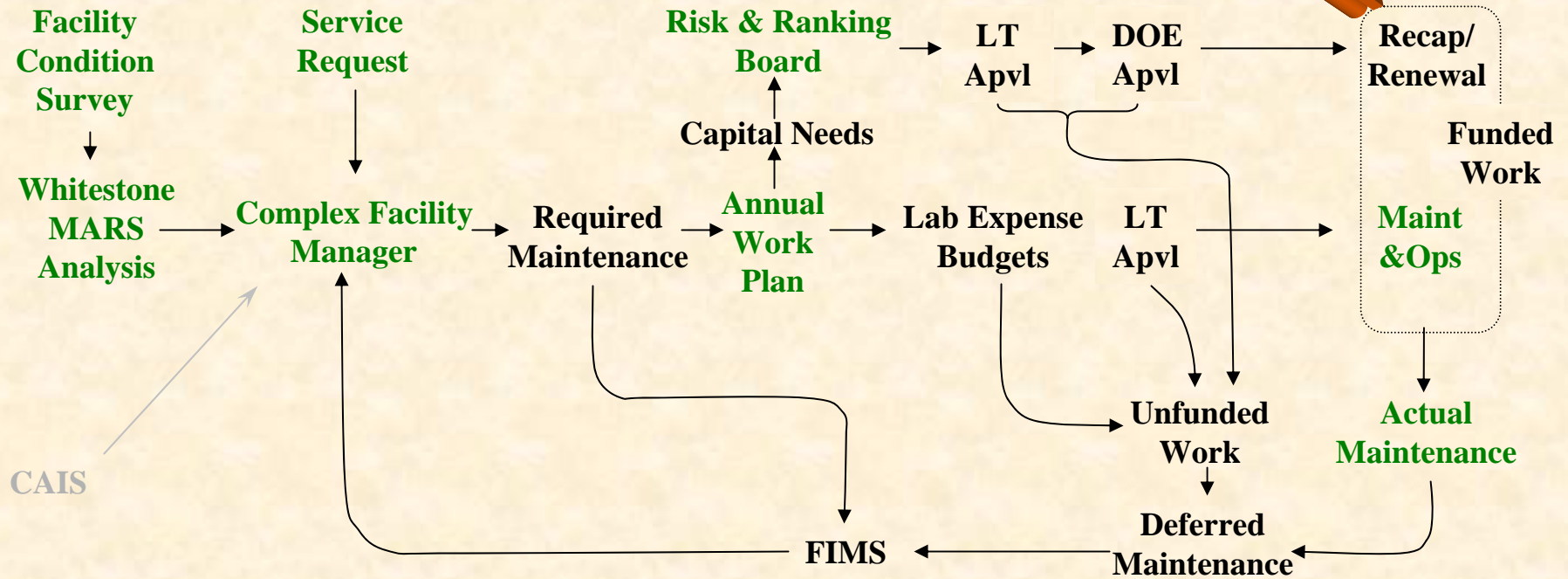
## Cornerstone:

- Facility Manager
- Facility Mgmt Model
- Data Quality
- Data Consistency
- Processes



# Facility Stewardship

**Today**  
or nearly so...



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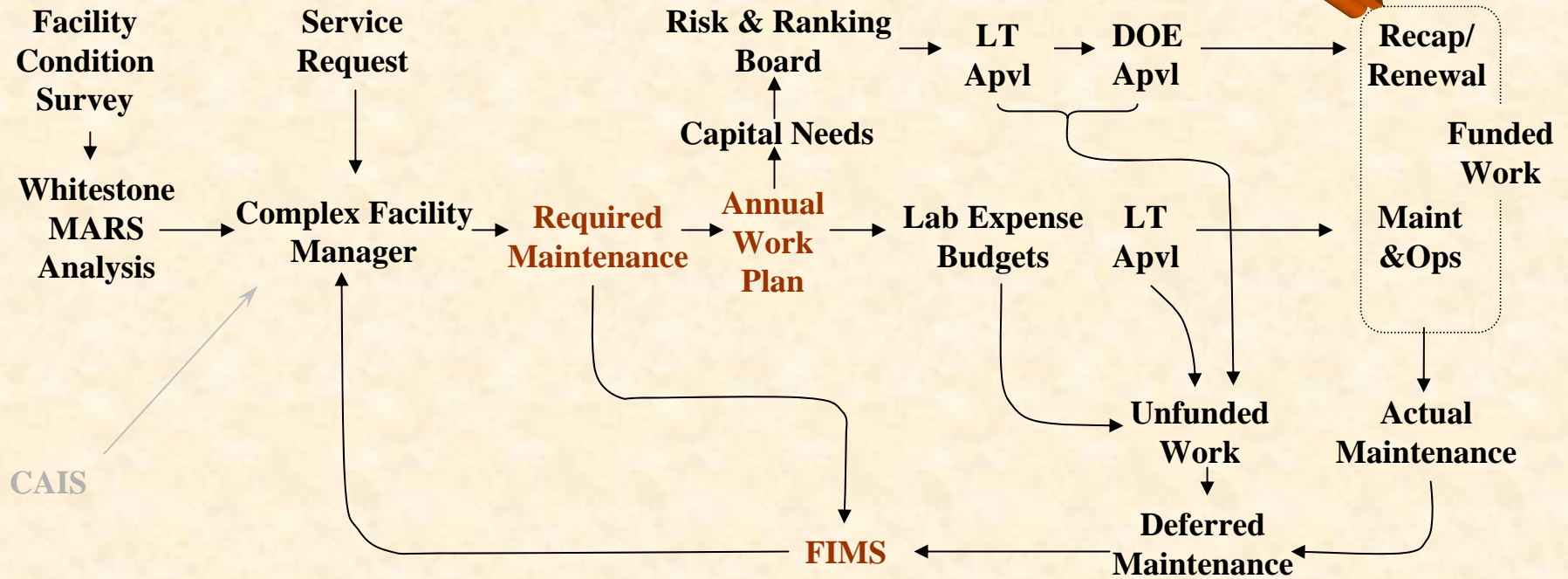
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## Completed:

- Unifomat labels
- Electronic Tool Interfaces
- Complex Mgr Assigns  
Work Priority (hazard  
based & knowledge based)
- Capital Work Priority Syst.
- Capital Review Board
- Annual Work Plan

# Facility Stewardship

**Today**  
or nearly so...



## Cornerstone:

- Facility Manager
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## Completed:

- Unifomat labels
- Electronic Tool Interfaces
- Complex Mgr Assigns Work Priority (hazard based & knowledge based)
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## Underway


- Documented Expense Priority Process
- Strengthening AWP/DM/TYSP
- Replacement Elec Tools
- Data Quality
- Annual Work Plan in Unifomat

# In Summary

## **We are addressing deferred maintenance prioritization through:**

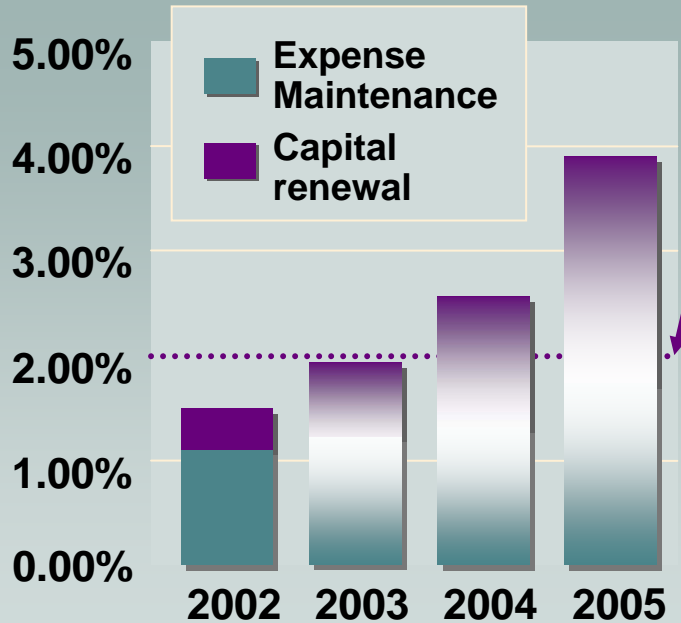
- **Portfolio Reduction (i.e. don't use unneeded facilities)**
- **Modernization (facilities and infrastructure)**
- **Focused Stewardship**
- **Risk/Ranking Capital Need**

## **We are in process of improving DM prioritization through:**

- **Improving our electronic tools**
- **Improving our processes**
- **Strengthening TYSP Connections**
- **Developing staff capabilities**
- **But** 

# We do not have sufficient capital budgets to support maintenance and renewal

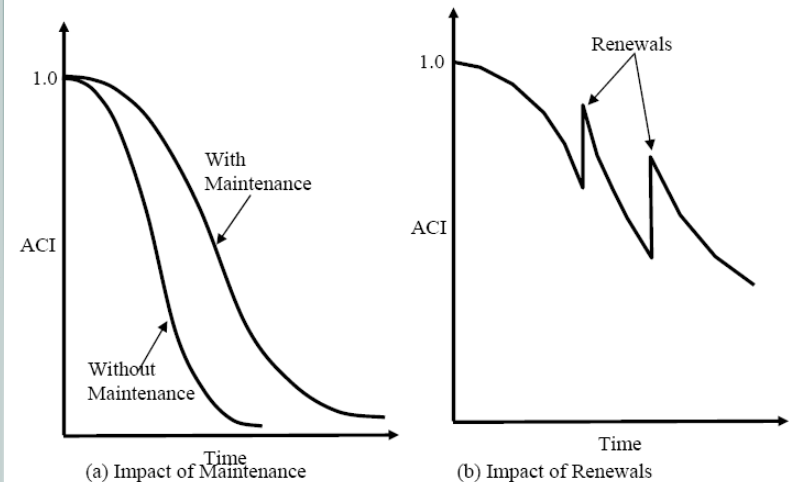
## Maintenance as % of RPV depends on capital renewal



We are meeting our expense goal of 2% RPV

- Can't renew old facilities using expense dollars
- We are running out of options for securing capital dollars

A National Research Council Model





# In closing - Isn't this better than the first pictures?

New conference rooms and lobbies



Courtyard



Credit union



New signage



Main Street



Water feature



New entrance gates



Fitness center



New auditorium



Coffee bar

**OAK RIDGE NATIONAL LABORATORY**  
**U. S. DEPARTMENT OF ENERGY**

